STR-AV280L

SERVICE MANUAL

G-AEP Model

SPECIFICATIONS

Amplifier section

Continuous RMS power output
(both channels driven simultaneously) According to DIN 45500
35 + 35 watts (8 ohms)
At 1 kHz
40 + 40 watts (5% THD, 8 ohms)

Dynamic headroom
1.4 dB ('78 IHF)

Harmonic distortion
Less than 0.8% at rated output

Intermodulation (IM) distortion
(60 Hz: 7 kHz = 4 : 1) Less than 0.8% at rated output

Frequency response
PHONO: RIAA equalization curve ±0.5 dB
CD/AUX, VIDEO, TAPE: 10 Hz - 50 kHz $^{+0}_{-3}$ dB

Residual noise Less than 150 μV (8 ohms, network A)

Damping factor 30 (8 ohms, 1 kHz)

Inputs

	Sensitivity	Impedance	S/N (weighting network, input level)
PHONO	2.5 mV	50 kΩ	74 dB 72 dB* (A, 2.5 mV)
CD/AUX VIDEO TAPE	150 mV	50 kΩ	95 dB 80 dB* (A, 150 mv)

* '78 IHF

Outputs
REC OUT, VIDEO OUT
Voltage 150 mV
Impedance 10 kilohms
SPEAKER A, B
Accept speakers of 8 - 16 ohms
HEADPHONES
Accepts low and high impedance head phones

Tone controls BASS
±8 dB at 100 Hz
TREBLE
±8 dB at 10 kHz

Loudness +8 dB at 100 Hz (att. 30 dB)

FM tuner section

Tuning range 87.5 MHz - 108 MHz

Antenna terminals
75 ohms, unbalanced

Intermediate frequency
10.7 MHz

Sensitivity at 50 dB quieting
17.3 dBf, 4 μV (mono)
38.3 dBf, 45 μV (stereo)

Usable sensitivity
11.2 dBf, 2 μV (IHF)

Signal-to-noise ratio
78 dB (mono), 73 dB (stereo)

Harmonic distortion
0.15% (mono), 0.3% (stereo) at 1 kHz

IM distortion 0.15% (mono), 0.3% (stereo)

Separation 45 dB at 1 kHz

Frequency response
40 Hz - 12.5 kHz $^{+0.5}_{-1}$ dB

Selectivity 60 dB at 400 kHz

Capture ratio 1.5 dB

—Continued on page 2—

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

FM STEREO/FM-AM RECEIVER

SONY®

MICROFILM

AUD

AM suppression ratio
54 dB
Image response ratio
45 dB
IF response ratio
90 dB
Spurious response ratio
70 dB
RF intermodulation
60 dB
Auto-tuning threshold
Approx. 30 dBf

MW/LW tuner section

Tuning range: MW: 531 kHz - 1602 kHz
LW: 153 kHz - 344 kHz
Antenna: External antenna terminal
Intermediate frequency
450 kHz
Usable sensitivity
With Layout-free antenna
MW: 55 dB/m (1000 kHz)
LW: 64 dB/m (230 kHz)
With an external antenna
MW: 100 μV (1000 kHz)
LW: 100 μV (230 kHz)
Signal-to-noise ratio
55 dB (50 mV/m)
Harmonic distortion
0.3% (50 mV/m, 400 Hz)
Selectivity: 35 dB (9 kHz)
Image response ratio
42 dB (MW at 1000 kHz, LW at 230 kHz)

General

System: Tuner section: PLL quartz-locked digital synthesizer system
Preamplifier section: low-noise NF type equalizer amp
Power amplifier section: quasi-complementary SEPP
Power requirements
220 V ac, 50 Hz
Power consumption
92 W
AC outlets: 2 switched, total 100 watts max.
Dimensions: Approx. 430 × 105 × 300 mm (w/h/d) (17 × 4 1/4 × 11 7/8 inches) including projecting parts and controls
Weight: Approx. 6 kg (13 lb 4 oz) net
Approx. 7.3 kg (16 lb 2 oz) in shipping carton

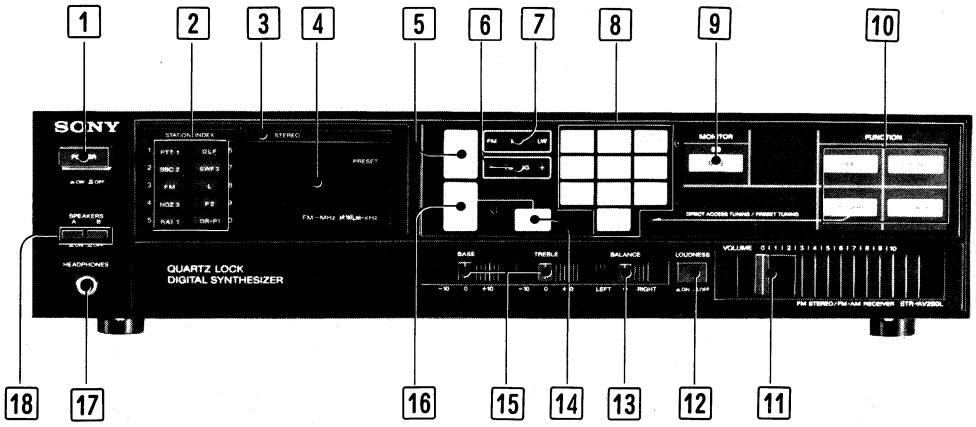
FEATURES

The STR-AV280L is a receiver whose video sound input/output jacks make it possible to connect a hi-fi video cassette recorder to your audio system.
The STR-AV280L employs a direct access tuning system which makes station selection easier than ever.

- A quartz-locked digital synthesizer system with a sophisticated Phase-Locked Loop (PLL) circuit allows extremely precise tuning of FM, MW and LW stations with an electronic digital readout on the frequency display. A total of 10 stations can be preset.
- With the single touch of a key, the desired function can be initiated or a preset station can be immediately tuned in and shown in the fluorescent display.
- Amplifier section provides 35 W + 35 W power output (DIN 45500) for your home audio-video system.
- Two separate speaker systems can be connected.

FUNCTION OF CONTROLS

Front



1 POWER switch

2 STATION INDEX (station identification) windows

3 STEREO indicator
Lights when an FM stereo program of sufficient signal strength is tuned in.

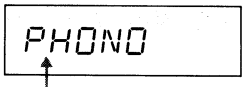
4 Frequency/function display window

During broadcast reception

Frequency being received.

The key number at which the frequency is memorized.

During reproduction of program source other than broadcast



Program in use.

5 FM MODE key
When receiving a very weak FM station or a noisy FM program, press this key. (The STEREO indicator will go out.) There is no stereo effect but the reception will be more stable and noise will be reduced. Press it again to return to the stereo mode when the frequency is changed.

6 TUNING key
Press either + or – of this key to scan the frequency coverage.

7 BAND select key

8 DIRECT ACCESS TUNING/PRESET TUNING keys (number keys)
For direct access tuning: After pressing the FM, MW or LW band select key, press to input the frequency of the desired station.
For preset tuning: After pressing the MEMORY PRESET key, press to preset the station being received or to call up a station which has been preset.

9 MONITOR (TAPE) key
Press this key to listen to a tape deck connected to the TAPE inputs on the rear panel.

10 FUNCTION select keys
VIDEO: For video programs.
PHONO: For record programs.
TUNER: For broadcasting programs.
CD/AUX: For compact disc programs or auxiliary programs.

11 VOLUME control

12 LOUDNESS switch
When listening to program sources at a low VOLUME control setting, depress the switch (ON).
The loudness circuit compensates for the human ear's decreased response to very low frequency sound at low volume levels, and provides an apparently uniform response.

13 BALANCE control
Governs the amount of sound coming from each paired speaker to get optimum stereo effect.
Sliding the control towards RIGHT will decrease the left channel volume, and sliding the control towards LEFT will decrease the right channel volume.

14 MEMORY PRESET key
Press to memorize the frequency of a station.

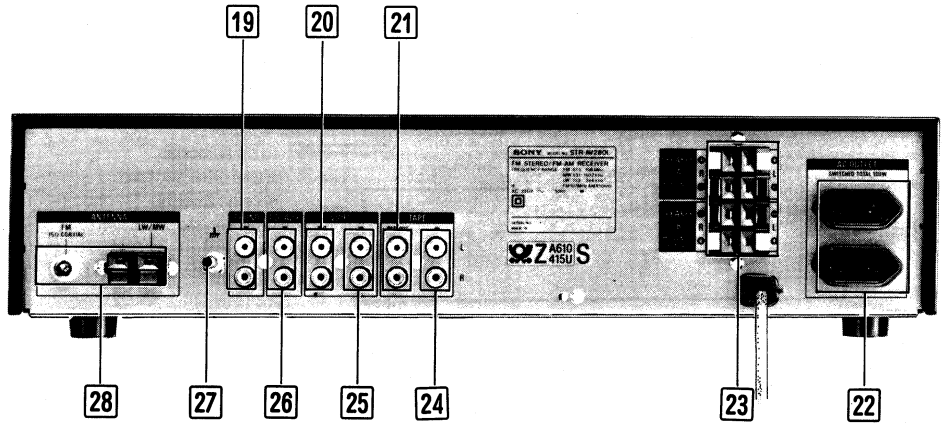
15 BASS and TREBLE controls
Control the prominence of bass and treble response.

16 MEMORY SCAN key

17 HEADPHONES jack
For headphone monitoring only, keep both SPEAKERS switches OFF.

18 SPEAKERS selector
To drive speaker system A: depress A button.
To drive speaker system B: depress B button.
To drive both speaker systems: depress A and B buttons.
For headphone listening only: keep both buttons released.

Rear



19 PHONO input jacks (phono type)

20 VIDEO output jacks (phono type)

21 REC OUT (recording output) jacks (phono type)

22 AC OUTLETS (SWITCHED)
These are used to power other audio equipment whose power consumption is less than the wattage indicated on the AC OUTLET.

23 SPEAKER A, B connectors
System A and system B can be selected by means of the front panel SPEAKERS selectors.

24 TAPE input jacks (phono type)

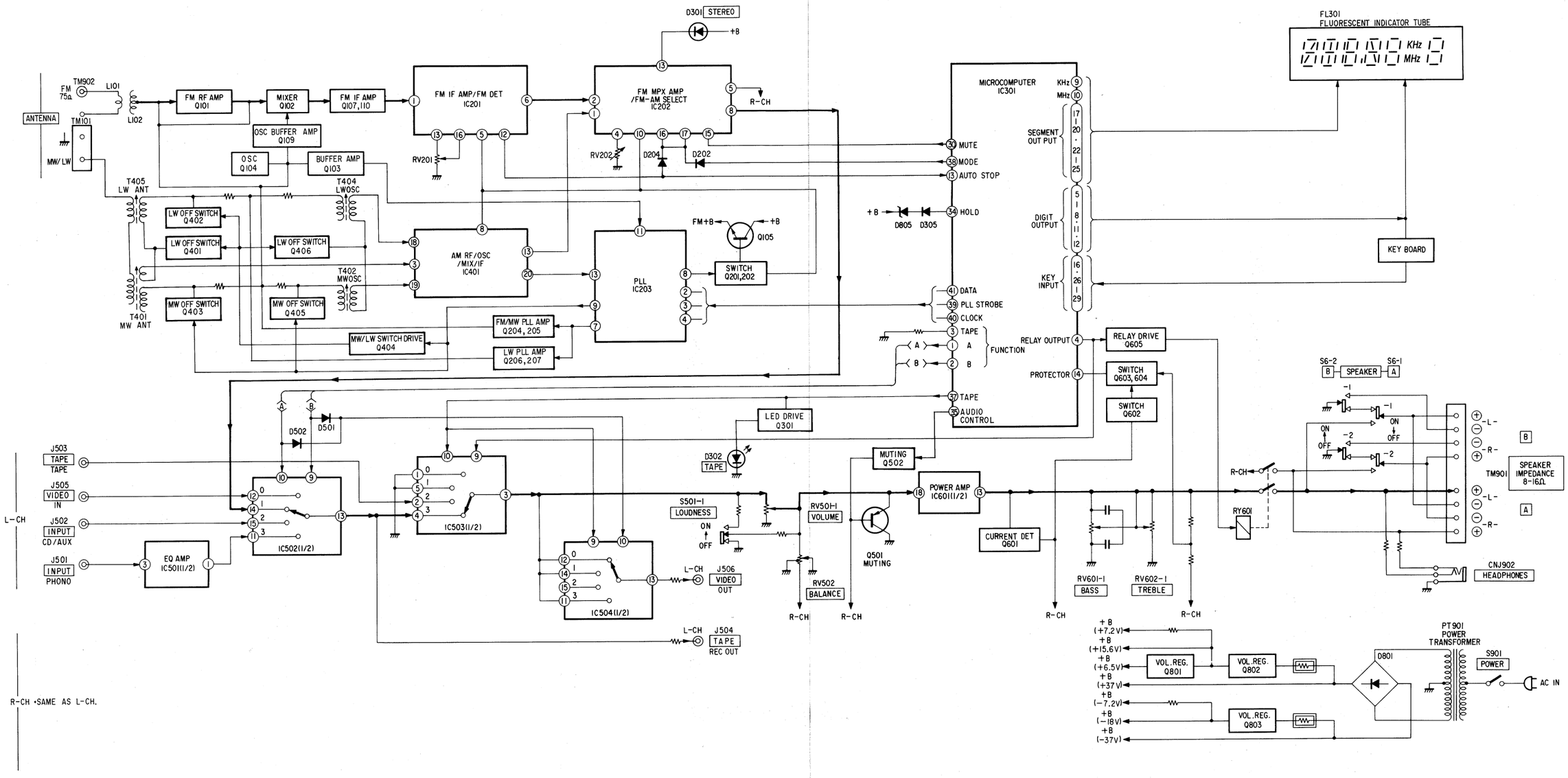
25 VIDEO input jacks (phono type)

26 CD/AUX (compact disc/auxiliary) inputs jack (phono type)
Connect to the output jacks of a compact disc player or a tape deck for playback.

27 ⏚ (phono ground) terminal

28 FM/MW/LW external antenna jacks

SECTION 1
BLOCK DIAGRAM



R-CH : SAME AS L-CH.

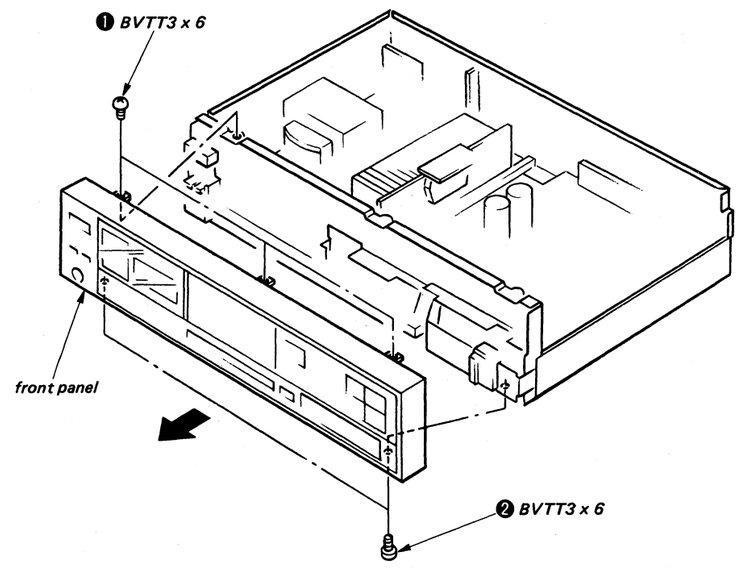
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

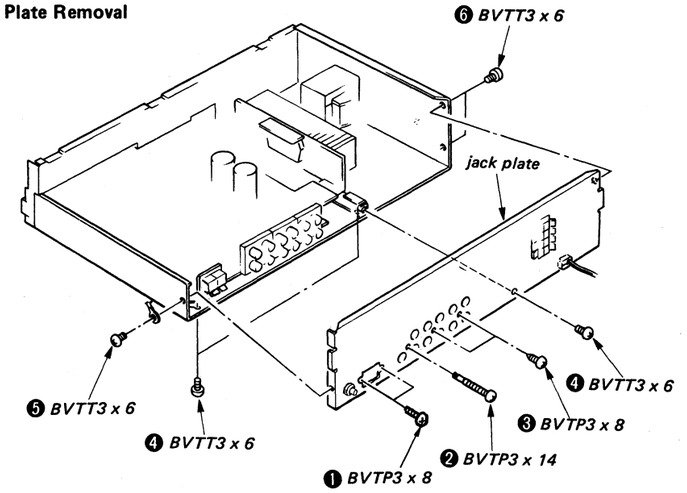
Top Cover Removal

Remove four screws at both sides.

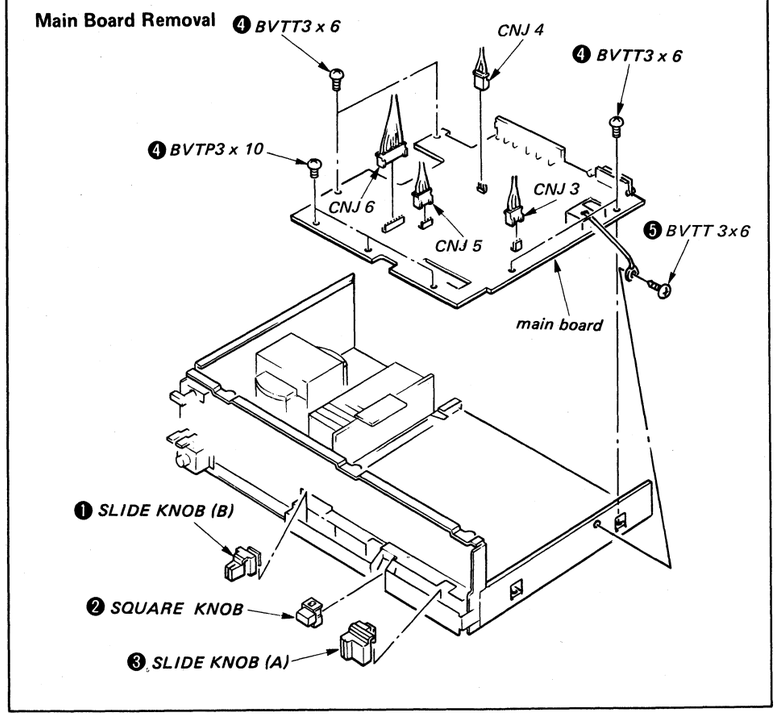
Front Panel Removal



Jack Plate Removal

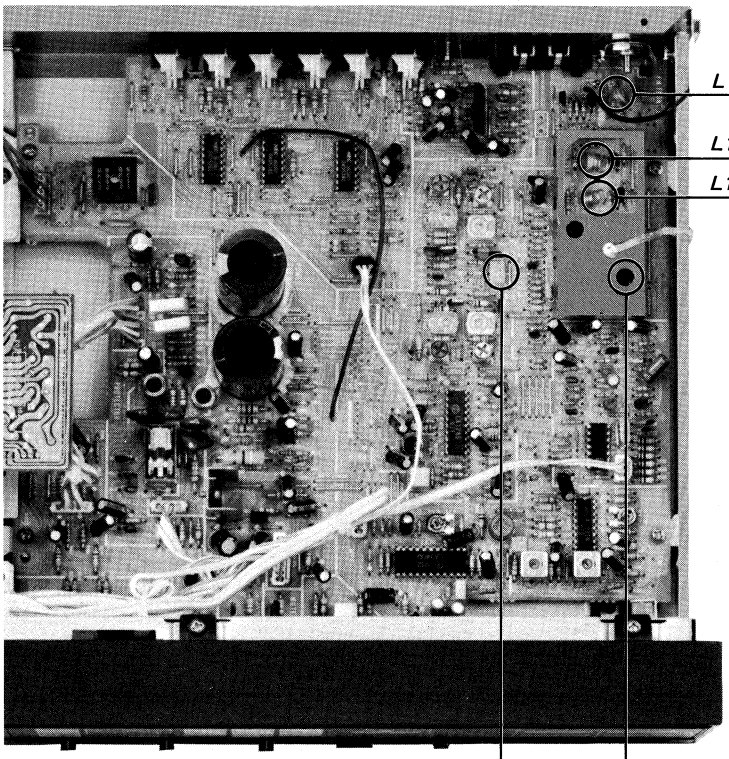


Main Board Removal



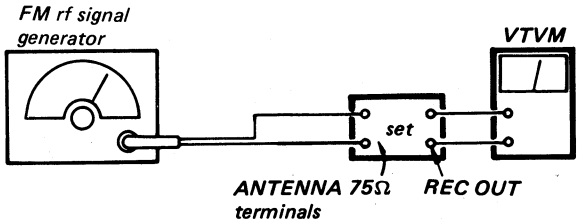
SECTION 3
ADJUSTMENTS

FM SECTION



FM TRACKING ADJUSTMENT

Setting:

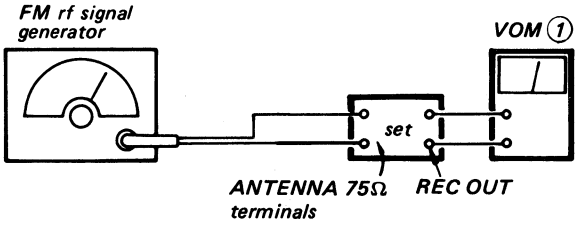


Carrier frequency: *98MHz*
Modulation: *400Hz, 40kHz deviation (100%)*
Output level: *3.2 – 5.3μV (10 – 15dB)*

1. Adjust L102, 104, 107 for maximum reading on VTVM.

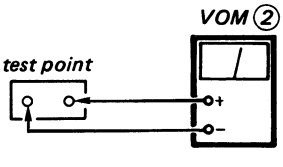
FM FREQUENCY COVERAGE ADJUSTMENT

Setting:

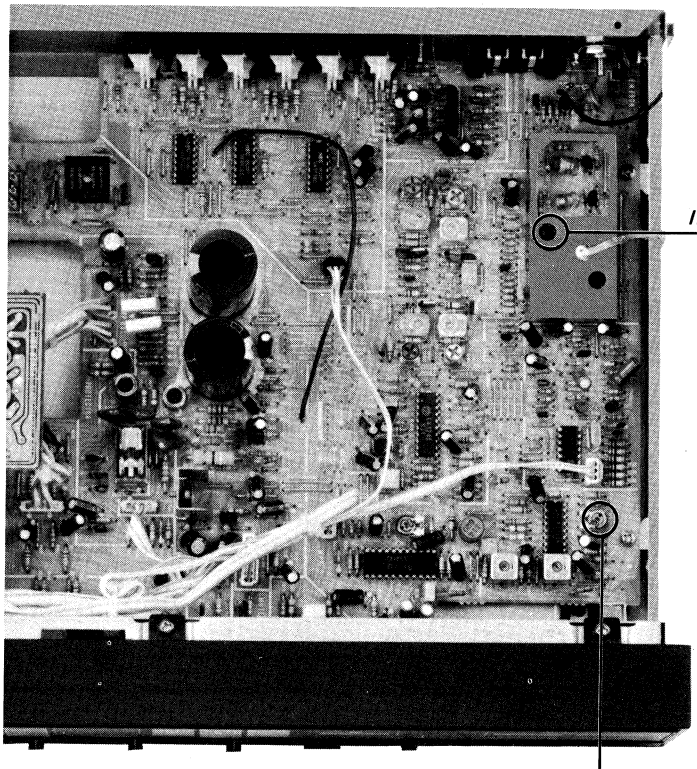


Carrier frequency: *108MHz*
Modulation: *400Hz, 40kHz deviation (100%)*
Output level: *1mV (60dB)*

1. Adjust L106 so that VOM ① reads 8.5V ±2V.
2. After the adjustment, set FM rf signal generator frequency to 87.5MHz.
   Confirm that VOM ② reads 2.6V ±0.5V.

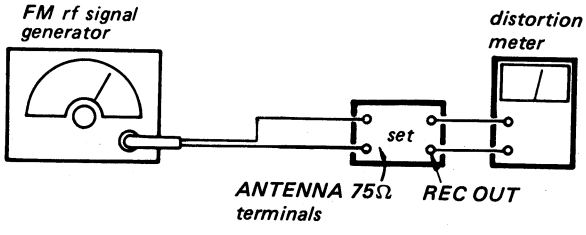


FM SECTION



FM IF ADJUSTMENT

Setting:



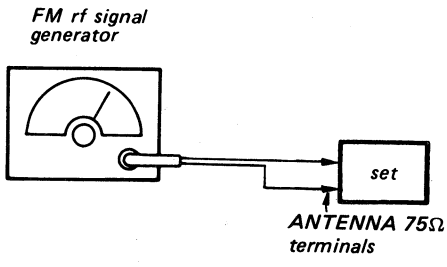
Carrier frequency: *98MHz*
Modulation: *400Hz, 40kHz deviation (100%)*
Output level: *10μV (20dB)*

Procedure:

Adjust the black core of IFT101 for minimum distortion.

FM Auto Stop Level Adjustment

Setting:



Procedure:

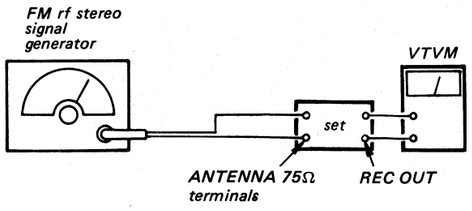
Carrier frequency: *98MHz*
Modulation: *400Hz, 40kHz deviation (100%)*
Output level: *14.3μV (23dB)*

1. Tune the set to 98MHz by pressing the TUNING buttons.
2. Adjust RV201 so that the STEREO lamp goes on.

FM SECTION

FM Stereo Separation Adjustment

Procedure:

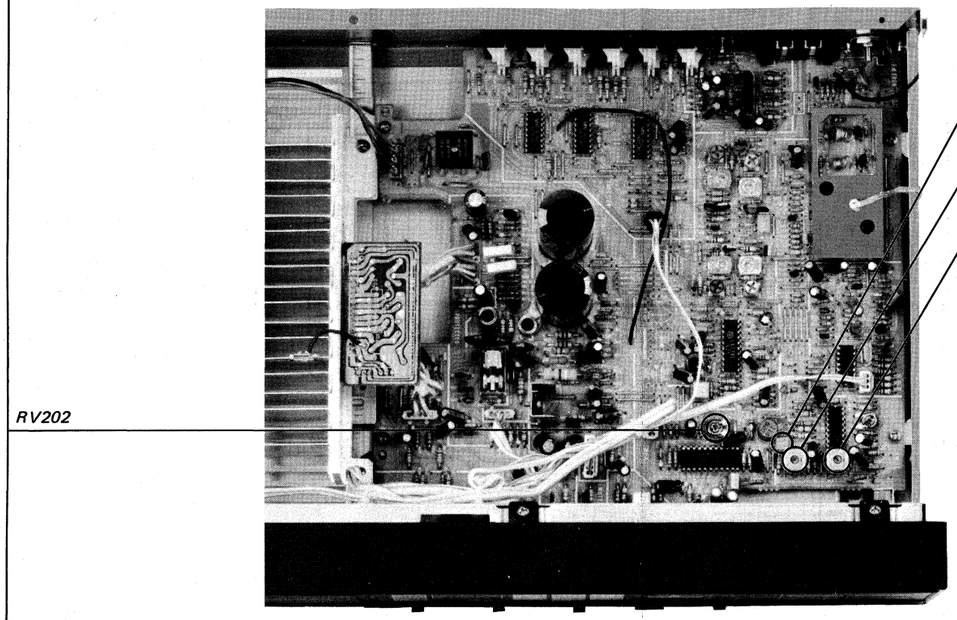


Carrier frequency: *98MHz*
Output level: *1mV (60dB)*
Modulation
Audio 400Hz: *16.25kHz deviation (45%)*
Sub channel 38kHz: *16.25kHz deviation (45%)*
Pilot signal 19kHz: *7.5kHz deviation (10%)*

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV202 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV202 for minimum reading.

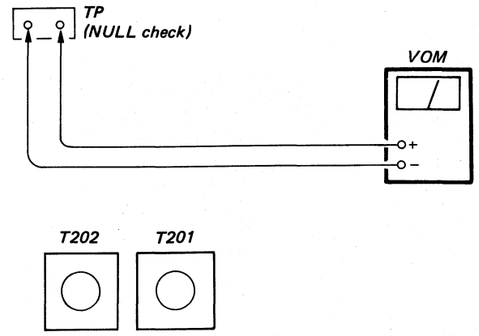
L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ

The separations of both channels should be equal.



FM Discriminator Alignment 1

Setting:



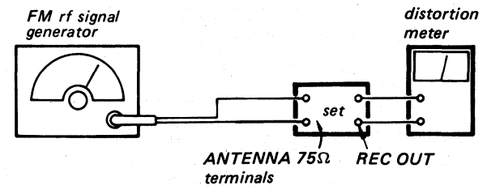
Procedure:

1. Tune the set in the strong station-signal.
2. Adjust the black core (primary-side) of T201 for 0V reading on VOM.

Note: When replacing the ceramic filter, perform this alignment.

FM Discriminator Alignment 2

Setting:

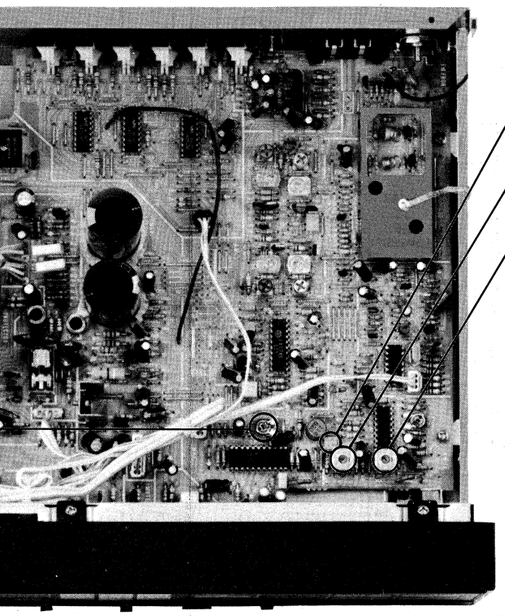


Carrier frequency: *98MHz*
Modulation: *400Hz, 40kHz deviation (100%)*
Output level: *10μV (20dB)*

Procedure:

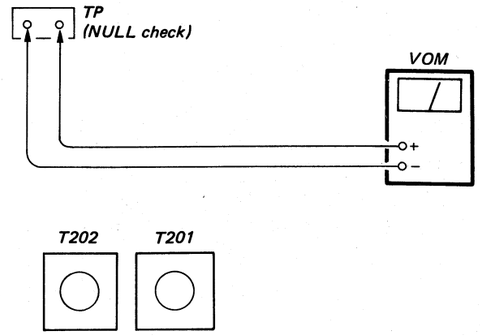
Adjust the white core (secondary side) of T202 for minimum distortion.

Note: When replacing the ceramic filter, perform this alignment.
Repeat the secondary-side and primary-side alignments several times.



FM Discriminator Alignment 1

Setting:



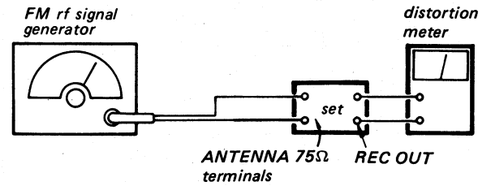
Procedure:

1. Tune the set in the strong station-signal.
2. Adjust the black core (primary-side) of T201 for 0V reading on VOM.

Note: When replacing the ceramic filter, perform this alignment.

FM Discriminator Alignment 2

Setting:



Carrier frequency: *98MHz*
Modulation: *400Hz, 40kHz deviation (100%)*
Output level: *10μV (20dB)*

Procedure:

Adjust the white core (secondary side) of T202 for minimum distortion.

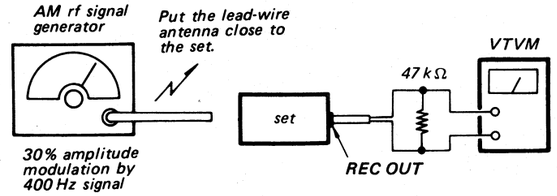
Note: When replacing the ceramic filter, perform this alignment.
Repeat the secondary-side and primary-side alignments several times.

AM SECTION

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM TRACKING ADJUSTMENT

Setting:



Procedure:

1. Tune the set to the SG signal.
2. Adjust for a maximum reading on VTVM.

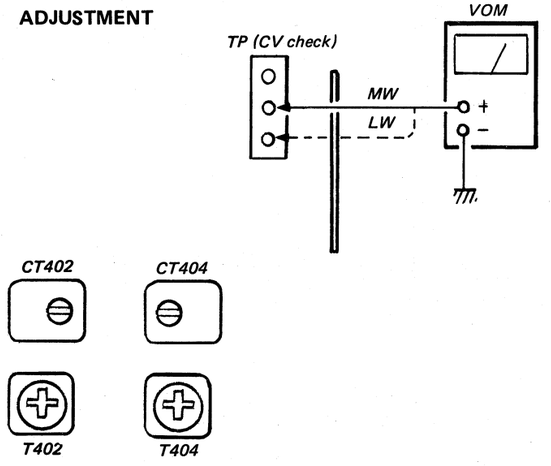
MW

	SG and set frequency	Adjustment parts	Reading on VTVM
1.	603kHz	core of T401	Maximum
2.	1,404kHz	CT401	

LW

	SG and set frequency	Adjustment parts	Reading on VTVM
1.	170kHz	core of T405	Maximum
2.	310kHz	CT403	

AM FREQUENCY COVERAGE ADJUSTMENT

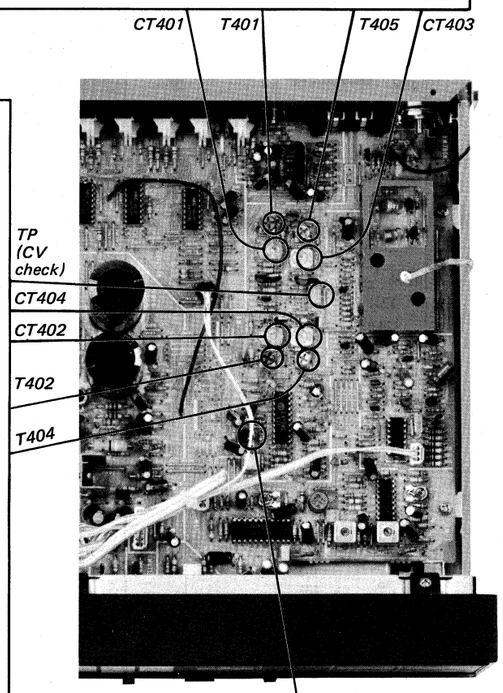


MW

	Frequency display in set	Voltage at TP (CV)	Adjustment parts
1.	531kHz	1.1V ± 0.2V	T402
2.	1,602kHz	9.0V ± 0.2V	CT402

LW

	Frequency display in set	Voltage at TP (CV)	Adjustment parts
1.	153kHz	1.0V ± 0.2V	T404
2.	344kHz	9.0V ± 0.2V	CT404



450kHz	T403
Adjust for a maximum reading on VTVM.	
AM IF ALIGNMENT	

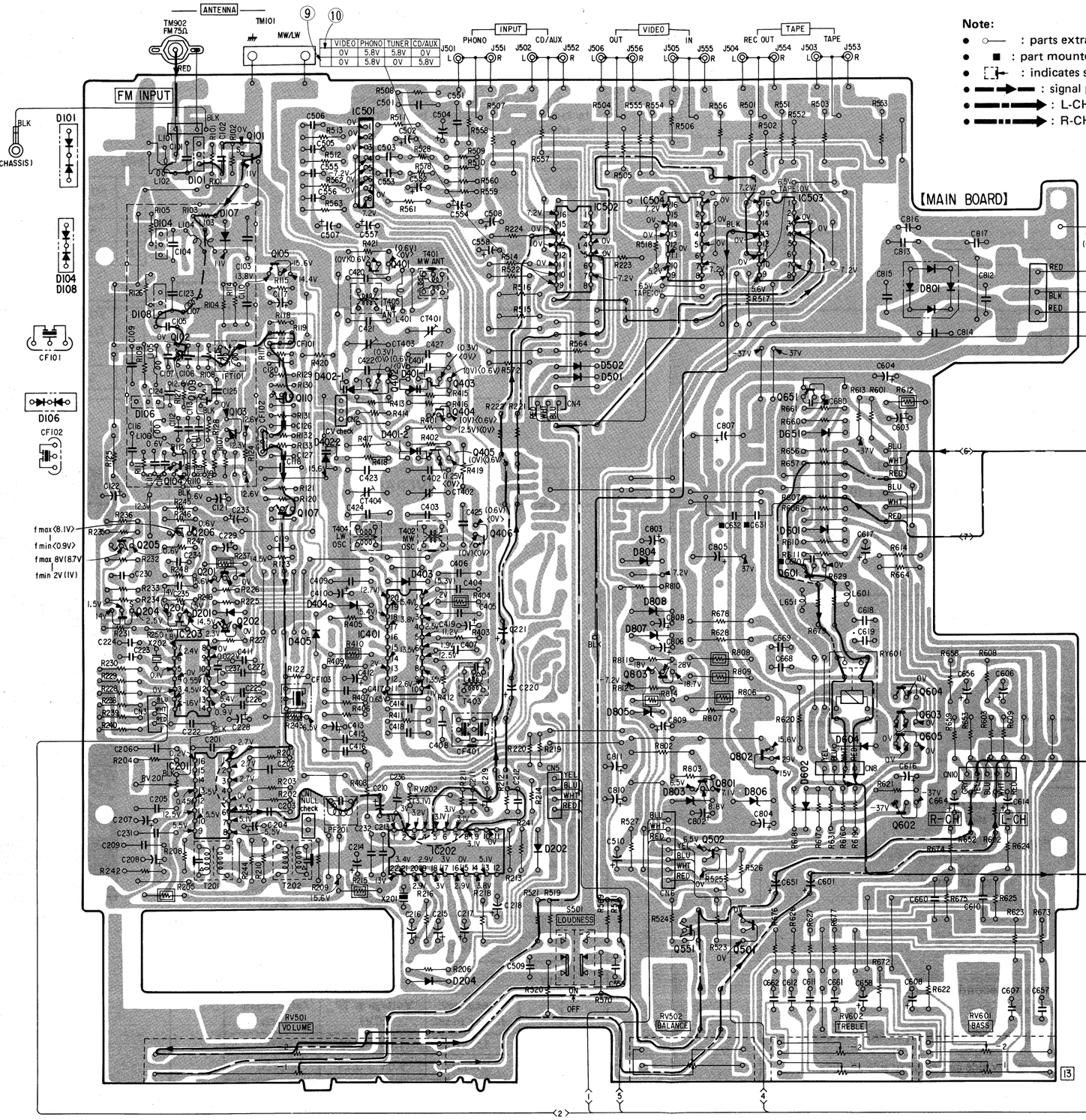
4-1. MOUNTING DIAGRAM

● Refer to page 22 for semiconductor lead layouts.

Q, IC	D
IC501	
Q101	101
IC504 IC503	107
IC502	104
Q105, Q401	
	801
	108
Q102	502
	501
Q402 Q403	401-1
Q109 Q651	402-1
Q110 Q404	106
Q103	651
	401-2
Q104 Q405	402-2
Q107	
IC601	
Q206	601
Q205	804
Q201 Q601	403
Q204 Q207	404
Q202	201 808
IC401	405 807
Q803	
IC203	
Q604	
Q603	805
Q605 Q301	301 304 303
Q802	604
Q801	302
IC201	803, 806
Q602	313
IC301	602 314
IC202	202
Q502	
	306
Q551 Q501	309, 308
	307 310
	204 305

Q, IC	D

Note:
- ○— : parts extracted from the component side.
- ■ : part mounted on the conductor side.
- [ ]— : indicates side identified with part number.
- ▬▶▬ : signal path
- ▬▶▬ : L-CH signal path
- ▬▶▬ : R-CH signal path



Note:

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- ▬▶▬ : signal path
- ▬▶▬ : L-CH signal path
- ▬▶▬ : R-CH signal path

【MAIN BOARD】

【SP TERMINAL BOARD】

【IC BOARD】

【SP SWITCH BOARD】

【HEADPHONE BOARD】

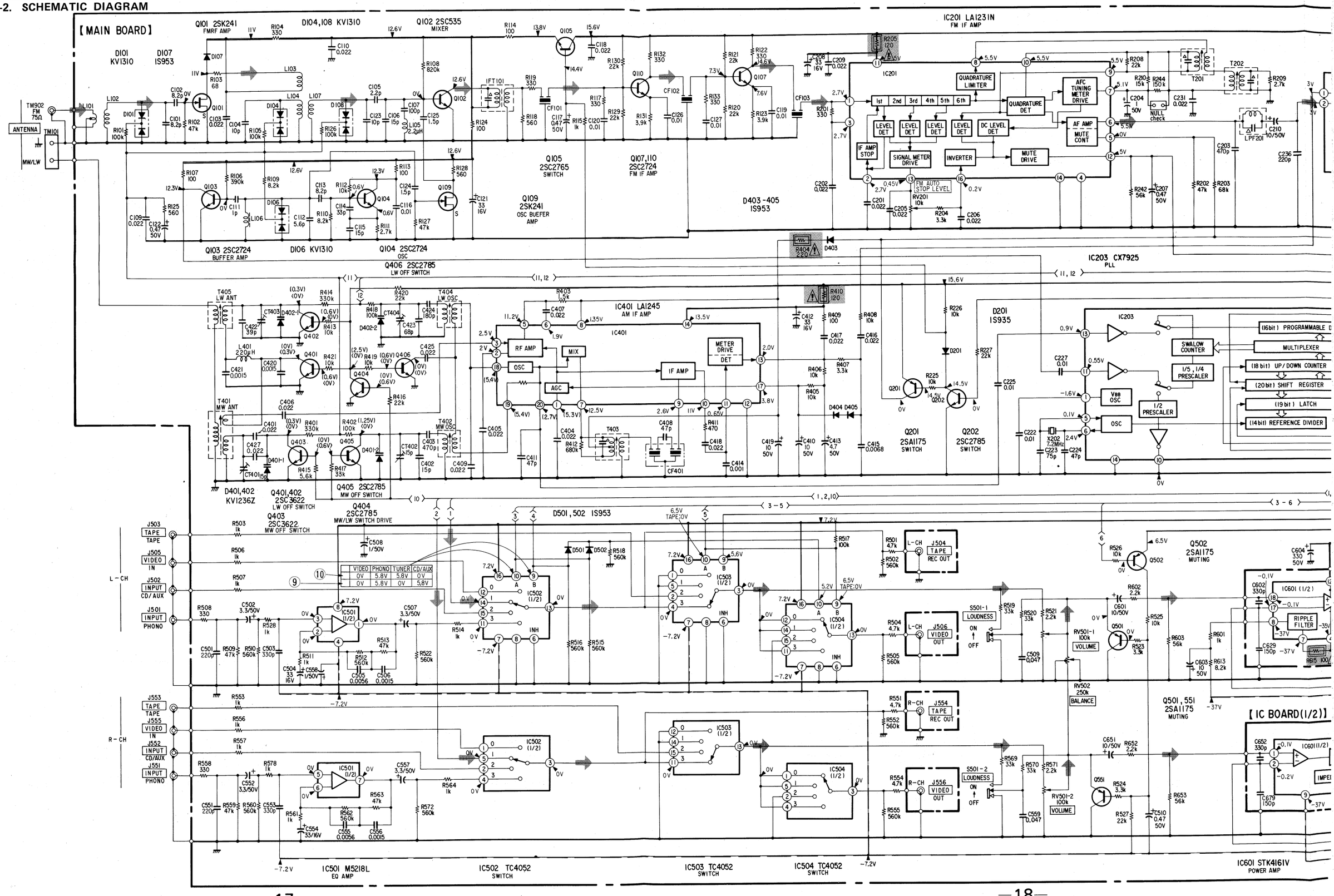
【FUSE BOARD】

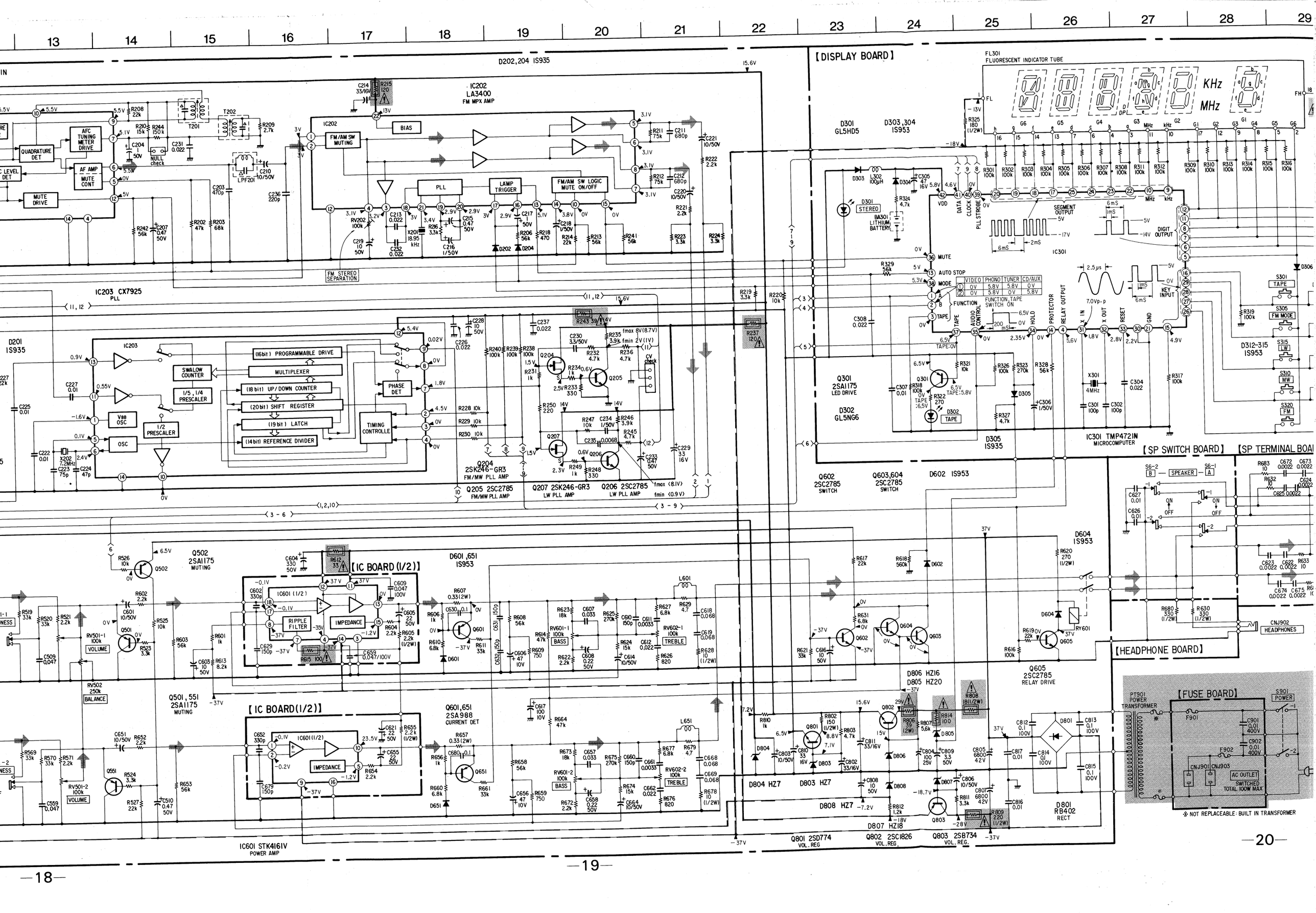
【DISPLAY BOARD】

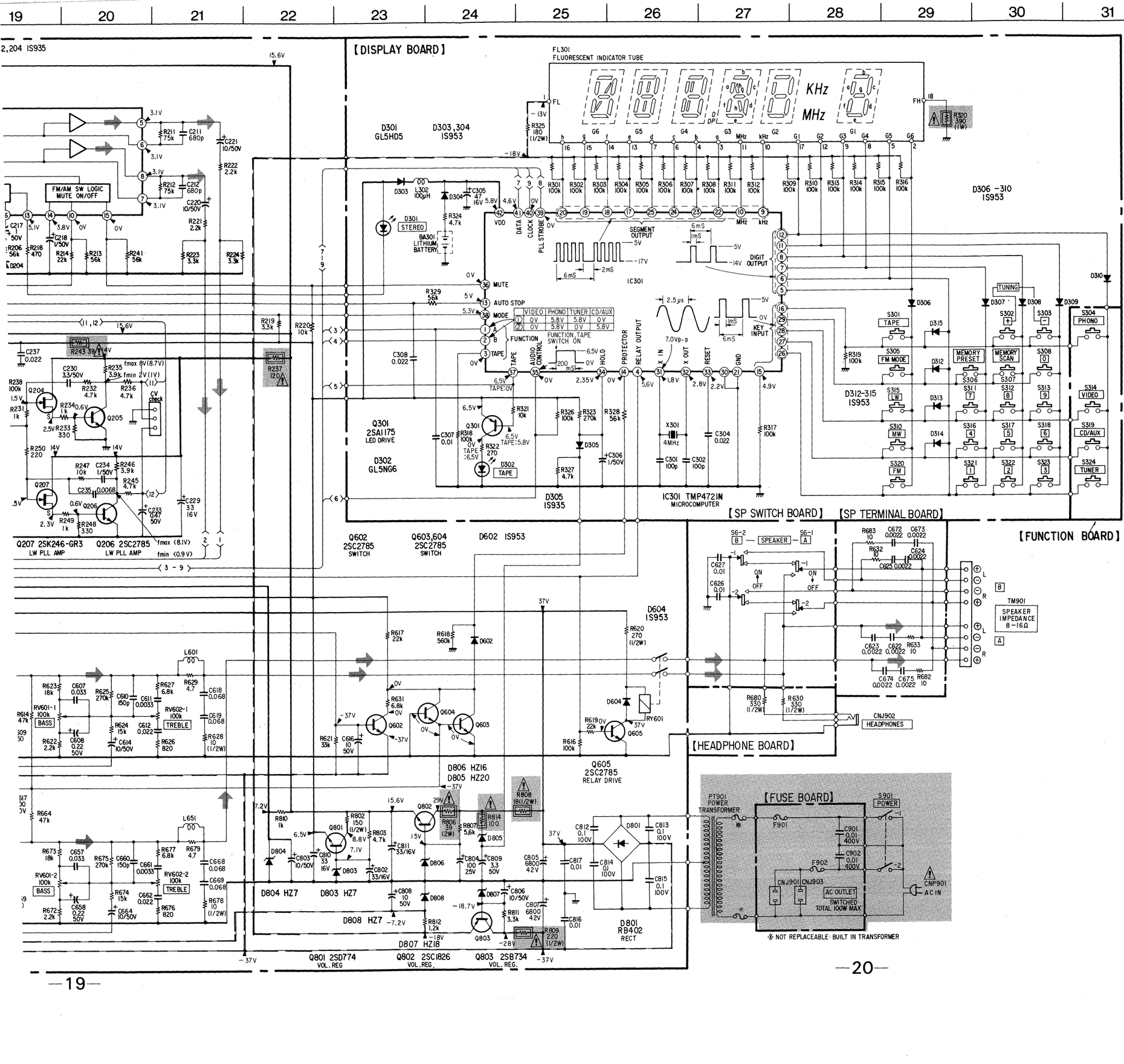
【FUNCTION BOARD】

	VIDEO	PHONO	TUNER	CD/AUX
①	0V	5.8V	5.8V	0V
②	0V	5.8V	0V	5.8V

4-2. SCHEMATIC DIAGRAM




13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
D202,204 IS935
IC202 LA3400 FM MPX AMP
IC203 CX7925 PLL
【DISPLAY BOARD】
FL301 FLUORESCENT INDICATOR TUBE
D301 GL5HD5
D303,304 IS953
IC301 TMP472IN MICROCOMPUTER
D301 STEREO
BA301 LITHIUM BATTERY
Q301 2SA1175 LED DRIVE
D302 GL5NG6
D305 IS935
【SP SWITCH BOARD】
【SP TERMINAL BOARD】
【HEADPHONE BOARD】
【FUSE BOARD】
Q502 2SA1175 MUTING
Q501,551 2SA1175 MUTING
【IC BOARD(1/2)】
IC601 STK4161V POWER AMP
D601,651 IS953
Q601,651 2SA988 CURRENT DET
Q602 2SC2785 SWITCH
Q603,604 2SC2785 SWITCH
D602 IS953
Q604 2SC1826
Q605 2SC2785 RELAY DRIVE
D604 IS953
D806 HZ16
D805 HZ20
D804 HZ7
D803 HZ7
D808 HZ7
D807 HZ18
D801 RB402 RECT
Q801 2SD774 VOL. REG
Q802 2SC1826 VOL. REG.
Q803 2SB734 VOL. REG.
PT901 POWER TRANSFORMER
※ NOT REPLACEABLE: BUILT IN TRANSFORMER
—18—
—19—
—20—



Note on schematic diagram:

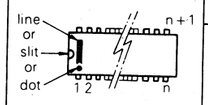
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ——— : B+ bus.
- - - - : B- bus.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with VOM (50 kΩ/V).
  no mark: FM
  ( ) : MW
  < > : LW
- Voltage variations may be noted due to normal production tolerances.
- ➡ : signal path.
- Switches

Ref. No.	Switch	Position
S6	SPEAKER A/B	A
S301	TAPE	OFF
S302	+	OFF
S303	-	OFF
S304	PHONO	OFF
S305	FM MODE	OFF
S306	MEMORY PRESET	OFF
S307	MEMORY SCAN	OFF
S308	0	OFF
S310	MW	OFF
S311	7	OFF
S312	8	OFF
S313	9	OFF
S314	VIDEO	OFF
S315	LW	OFF
S316	4	OFF
S317	5	OFF
S318	6	OFF
S319	CD/AUX	OFF
S320	FM	OFF
S321	1	OFF
S322	2	OFF
S323	3	OFF
S324	TUNER	OFF
S501	LUDNESS	OFF
S901	POWER	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

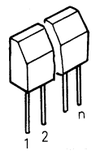
• Semiconductor Lead Layouts

CX7925
LA3400
LA1231
LA1245
TC4052BP
TMP47C21N-3115

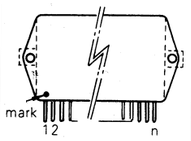


(Top view)

M5218L

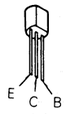


STK4161MK5

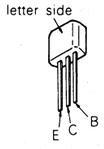


(Marking side view)

2SA988F



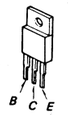
2SA1049
2SC2603F
2SC2724
2SC2785



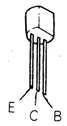
2SB734
2SD774

2SC535

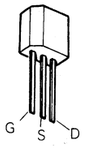
2SC1826-Y



2SC3622A-K

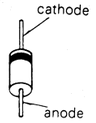


2SK241-Y

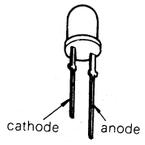


2SK246-GR2
2SK246-GR3

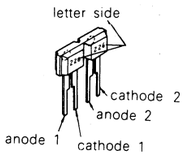
1SS202-1
HZ16-1L
HZ18-2L
HZ20-2L
HZ7B-2L
HZ7C-2L



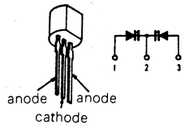
GL5HD5
GL5NG6



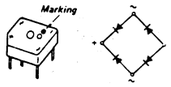
KV1236Z



KV1310

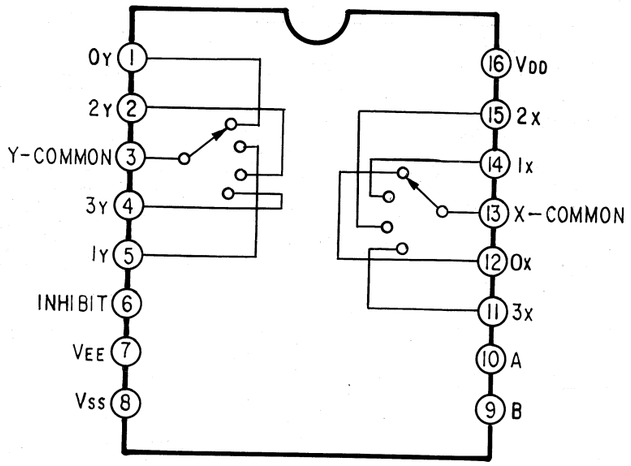


RB402



【 TC4052BP 】

TC4052BP (IC501, 502, 503) is a analog multiplexer. In this IC, A and B inputs control the two 4-channel analog switches.



truth table

A	B	INHIBIT	"ON" Channel
0	0	0	0X, 0Y
1	0	0	1X, 1Y
0	1	0	2X, 2Y
1	1	0	3X, 3Y
X	X	1	–

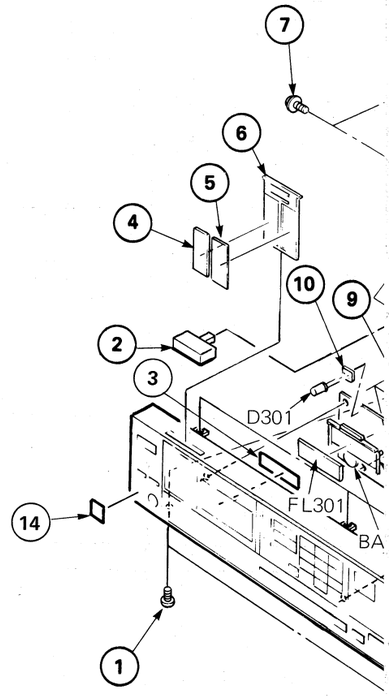
X: Don't care

EXPLODE

NOTE:

- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

(1).



No.	Part No.	Description
1	7-685-871-01	SCREW +BVTT 3X6 (S)
2	3-332-417-11	KNOB (POWER), PUSH
3	*4-906-706-01	FILTER
4	*4-906-725-01	LABEL, STATION (1)
5	*4-906-724-01	LABEL, STATION (2)
6	4-906-711-01	HOLDER, STATION
7	4-889-321-11	SCREW
8	4-881-736-61	CASE
9	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S
10	*4-881-653-00	SPACER, LED
11	*4-884-011-03	HOLDER

SECTION 5
EXPLODED VIEWS AND PARTS LIST

NOTE:
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:µF, PF:µµF.

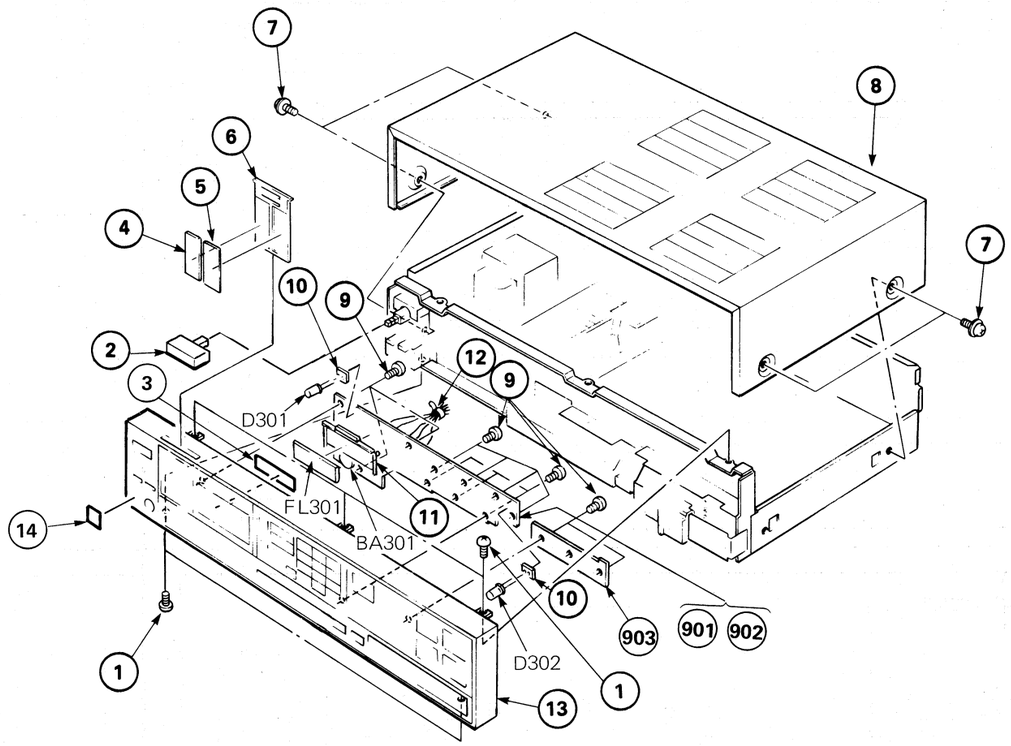
RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : µH

SEMICONDUCTORS
In each case, U : µ, for example:
UA...: µA..., UPA...: µPA..., UPC...: µPC, UPD...: µPD...

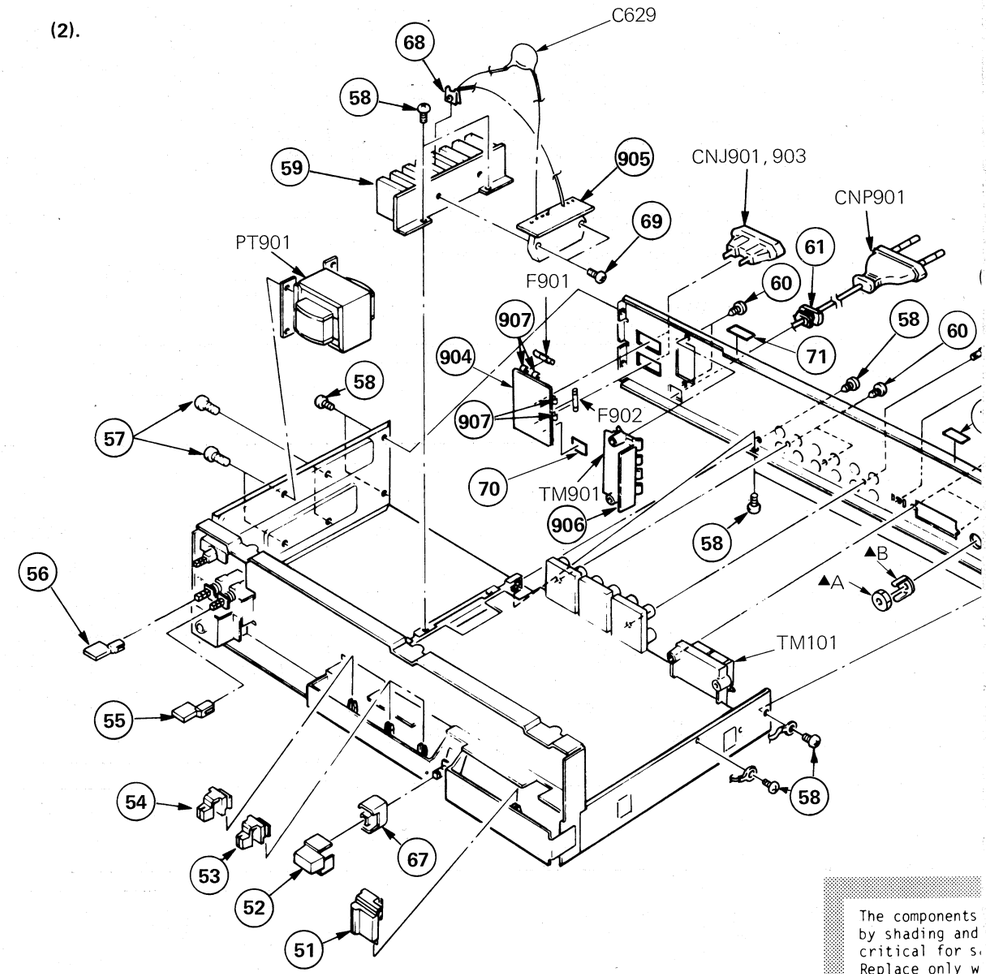
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(1).



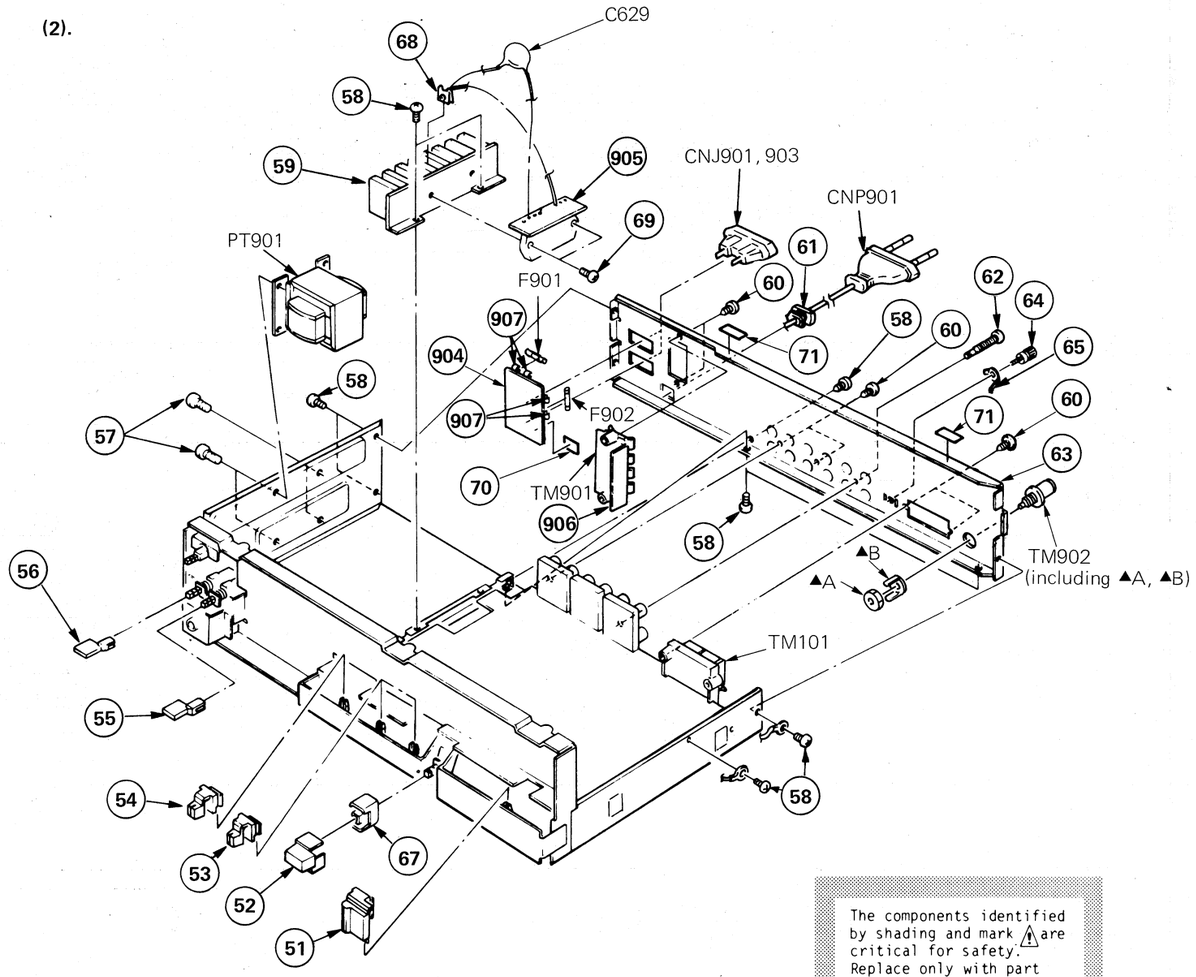
No.	Part No.	Description	Remarks
1	7-685-871-01	SCREW +BVTT 3X6 (S)	
2	3-332-417-11	KNOB (POWER), PUSH	
3	*4-906-706-01	FILTER	
4	*4-906-725-01	LABEL, STATION (1)	
5	*4-906-724-01	LABEL, STATION (2)	
6	4-906-711-01	HOLDER, STATION	
7	4-889-321-11	SCREW	
8	4-881-736-61	CASE	
9	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
10	*4-881-653-00	SPACER, LED	
11	*4-884-011-03	HOLDER	
12	3-701-748-00	CLAMP	
13	X-4906-784-1	PANEL ASSY, FRONT	
14	3-703-710-41	STICKER, SONY SYMBOL (12)	
901	*1-613-728-11	PC BOARD, DISPLAY	
902	*A-4472-149-A	MOUNTED PCB, DISPLAY	
903	*1-613-730-11	PC BOARD, FUNCTION	
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)	
D301	8-719-904-55	DIODE GL-5HD5	
D302	8-719-905-06	DIODE GL-5NG6	
FL301	1-519-297-00	INDICATOR TUBE, FLUORESCENT	

(2).



No.	Part No.	Description	Remarks
51	4-906-714-11	KNOB (A), SLIDE	
52	4-906-705-11	KNOB, SQUARE	
53	4-906-713-21	KNOB (B), SLIDE	
54	4-906-713-31	KNOB (B), SLIDE	
55	4-876-722-71	KNOB (4X10), SQUARE	
56	4-876-722-61	KNOB (4X10), SQUARE	
57	7-685-881-01	SCREW +BVTT 4X8 (S)	
58	7-685-871-01	SCREW +BVTT 3X6 (S)	
59	*4-915-923-01	HEAT SINK (D)	
60	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
61	3-703-244-00	BUSHING (2104), CORD	
62	3-703-473-00	SCREW, TERMINAL	
63	*4-906-802-21	PLATE, JACK	
64	3-706-165-00	SCREW	
65	3-701-993-00	SPACER, TERMINAL	
67	4-864-307-00	RING	
68	*4-881-752-00	NUT, PLATE, SPECIAL	
69	7-685-650-71	SCREW +BVTP 3X16 TYPE2 IT-	
70	*3-701-948-16	LABEL, FUSE	
71	*3-561-902-00	CLOTH, RETAINING, CASSETTE	
904	*1-615-261-11	PC BOARD, FUSE	
905	*1-613-726-11	PC BOARD, IC	
906	*1-613-727-11	PC BOARD, SP TERMINAL	
907	⚠1-533-131-00	HOLDER, FUSE	
C629	1-102-108-00	CERAMIC 150PF 10% 5	
⚠CNJ901	1-526-794-11	OUTLET, AC	
⚠CNJ903	1-526-794-11	OUTLET, AC	
⚠CNP901	1-534-817-XX	CORD, POWER, EULO PLUG	
F901	⚠1-532-259-00	FUSE, TIME-LAG	
F902	⚠1-532-285-00	FUSE, TIME-LAG	
PT901	⚠1-448-611-11	TRASNFORMER, POWER	
TM101	1-536-707-00	TERMINAL BOARD, PUSH 2P	
TM901	1-536-706-00	TERMINAL BOARD (SP)	
TM902	1-561-919-00	SOCKET, CONNECTOR	

(2).

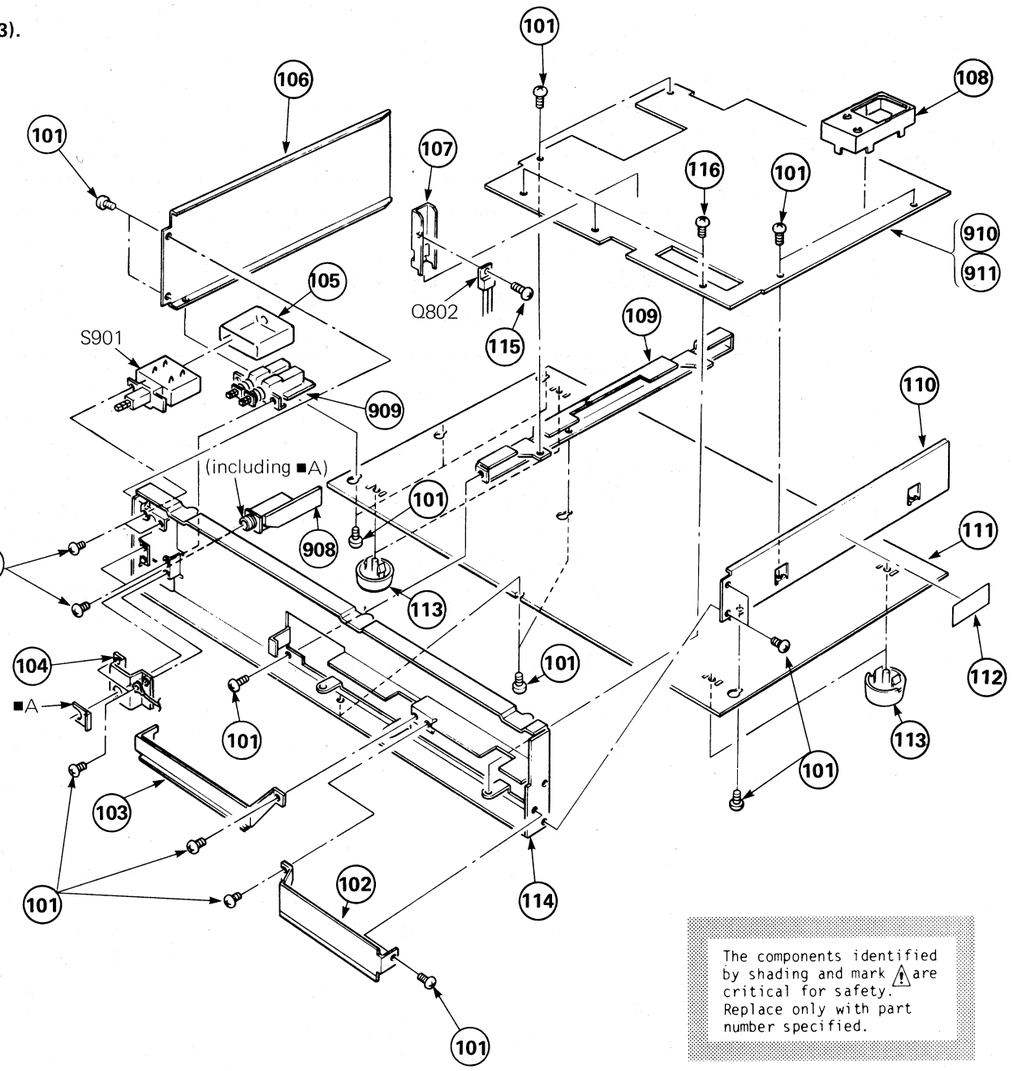


The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
51	4-906-714-11	KNOB (A), SLIDE	
52	4-906-705-11	KNOB, SQUARE	
53	4-906-713-21	KNOB (B), SLIDE	
54	4-906-713-31	KNOB (B), SLIDE	
55	4-876-722-71	KNOB (4X10), SQUARE	
56	4-876-722-61	KNOB (4X10), SQUARE	
57	7-685-881-01	SCREW +BVTT 4X8 (S)	
58	7-685-871-01	SCREW +BVTT 3X6 (S)	
59	*4-915-923-01	HEAT SINK (D)	
60	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
61	3-703-244-00	BUSHING (2104), CORD	
62	3-703-473-00	SCREW, TERMINAL	
63	*4-906-802-21	PLATE, JACK	
64	3-706-165-00	SCREW	
65	3-701-993-00	SPACER, TERMINAL	
67	4-864-307-00	RING	
68	*4-881-752-00	NUT, PLATE, SPECIAL	

No.	Part No.	Description	Remarks
69	7-685-650-71	SCREW +BVTP 3X16 TYPE2 IT-3	
70	*3-701-948-16	LABEL, FUSE	
71	*3-561-902-00	CLOTH, RETAINING, CASSETTE	
904	*1-615-261-11	PC BOARD, FUSE	
905	*1-613-726-11	PC BOARD, IC	
906	*1-613-727-11	PC BOARD, SP TERMINAL	
907	⚠1-533-131-00	HOLDER, FUSE	
C629	1-102-108-00	CERAMIC 150PF 10% 50V	
⚠CNJ901	1-526-794-11	OUTLET, AC	
⚠CNJ903	1-526-794-11	OUTLET, AC	
⚠CNP901	1-534-817-XX	CORD, POWER, EULO PLUG	
F901	⚠1-532-259-00	FUSE, TIME-LAG	
F902	⚠1-532-285-00	FUSE, TIME-LAG	
PT901	⚠1-448-611-11	TRASNFORMER, POWER	
TM101	1-536-707-00	TERMINAL BOARD, PUSH 2P	
TM901	1-536-706-00	TERMINAL BOARD (SP)	
TM902	1-561-919-00	SOCKET, CONNECTOR	

(3).



The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
101	7-685-871-01	SCREW +BVTT 3X6 (S)	
102	4-906-710-21	PLATE (A), ORNAMENTAL	
103	4-906-715-21	PLATE (B), ORNAMENTAL	
104	*4-888-121-00	HOLDER, H.P	
105	3-559-001-00	COVER, POWER SWITCH	
106	*4-906-716-01	PLATE (L), SIDE	
107	*4-857-562-00	HEAT SINK, TR	
108	*4-906-803-01	CASE, SHIELD	
109	*4-881-722-00	BRACKET, HEAT SINK	
110	*4-881-721-00	PLATE (RIGHT), SIDE	
111	*4-881-730-11	PLATE, BOTTOM	

No.	Part No.	Description	Remarks
112	*3-701-030-01	LABEL, SERIAL NUMBER	
113	X-4864-303-0	FOOT ASSY	
114	*4-906-717-01	PANEL, SUB	
115	7-685-645-71	SCREW +BVTP 3X6 TYPE2 SLIT	
116	7-685-647-14	SCREW +BVTP 3X10 TYPE2 N-S	
908	*1-613-729-11	PC BOARD, HEADPHONE	
909	*1-613-731-11	PC BOARD, SP.SW	
910	*A-4410-295-A	MOUNTED PCB, MAIN	
911	*1-613-725-11	PC BOARD, MAIN	
Q802	8-729-382-63	TRANSISTOR 2SC1826Y	
S901	⚠1-554-685-11	SWITCH, PUSH (AC POWER)(1 KEY)	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*1-613-728-11	PC BOARD, DISPLAY
902	*A-4472-149-A	MOUNTED PCB, DISPLAY
903	*1-613-730-11	PC BOARD, FUNCTION
904	*1-615-261-11	PC BOARD, FUSE
905	*1-613-726-11	PC BOARD, IC
906	*1-613-727-11	PC BOARD, SP TERMINAL
907	⚠ 1-533-131-00	HOLDER, FUSE
908	*1-613-729-11	PC BOARD, HEADPHONE
909	*1-613-731-11	PC BOARD, SP.SW
910	*A-4410-295-A	MOUNTED PCB, MAIN
911	*1-613-725-11	PC BOARD, MAIN
912	*1-535-115-00	TERMINAL
913	*1-535-116-00	TERMINAL
914	*1-536-354-00	POST PIN
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)
BP1	*1-560-265-00	BASE POST (U-TYPE)
BP2	*1-560-265-00	BASE POST (U-TYPE)
C101	1-162-198-31	CERAMIC 8.2PF 10% 50V
C102	1-162-198-31	CERAMIC 8.2PF 10% 50V
C103	1-161-494-00	CERAMIC 0.022MF 30% 25V
C104	1-162-199-31	CERAMIC 10PF 5% 50V
C105	1-162-191-31	CERAMIC 2.2PF 10% 50V
C106	1-162-203-31	CERAMIC 15PF 5% 50V
C107	1-162-282-31	CERAMIC 100PF 10% 50V
C109	1-161-494-00	CERAMIC 0.022MF 30% 25V
C110	1-161-494-00	CERAMIC 0.022MF 30% 25V
C111	1-162-187-31	CERAMIC 1PF 20% 50V
C112	1-162-196-31	CERAMIC 5.6PF 10% 50V
C113	1-162-198-31	CERAMIC 8.2PF 10% 50V
C114	1-162-211-31	CERAMIC 33PF 5% 50V
C115	1-162-203-31	CERAMIC 15PF 5% 50V
C116	1-162-306-31	CERAMIC 0.01MF 30% 16V
C117	1-123-379-00	ELECT 0.47MF 20% 50V
C118	1-161-494-00	CERAMIC 0.022MF 30% 25V
C119	1-162-306-31	CERAMIC 0.01MF 30% 16V
C120	1-162-306-31	CERAMIC 0.01MF 30% 16V
C121	1-123-318-00	ELECT 33MF 20% 16V
C122	1-123-379-00	ELECT 0.47MF 20% 50V
C123	1-162-199-31	CERAMIC 10PF 5% 50V
C124	1-162-189-31	CERAMIC 1.5PF 20% 50V
C125	1-162-189-31	CERAMIC 1.5PF 20% 50V
C126	1-162-306-31	CERAMIC 0.01MF 30% 16V
C127	1-162-306-31	CERAMIC 0.01MF 30% 16V
C201	1-161-494-00	CERAMIC 0.022MF 30% 25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C202	1-161-494-00	CERAMIC 0.022MF 30% 25V
C203	1-161-319-00	CERAMIC 470PF 10% 50V
C204	1-123-380-00	ELECT 1MF 20% 50V
C205	1-161-494-00	CERAMIC 0.022MF 30% 25V
C206	1-161-494-00	CERAMIC 0.022MF 30% 25V
C207	1-123-379-00	ELECT 0.47MF 20% 50V
C208	1-123-318-00	ELECT 33MF 20% 16V
C209	1-161-494-00	CERAMIC 0.022MF 30% 25V
C210	1-123-356-00	ELECT 10MF 20% 50V
C211	1-162-292-31	CERAMIC 680PF 10% 50V
C212	1-162-292-31	CERAMIC 680PF 10% 50V
C213	1-161-494-00	CERAMIC 0.022MF 30% 25V
C214	1-123-318-00	ELECT 33MF 20% 16V
C215	1-124-270-11	ELECT 0.47MF 20% 50V
C216	1-124-182-00	ELECT 1MF 20% 50V
C217	1-123-380-00	ELECT 1MF 20% 50V
C218	1-123-380-00	ELECT 1MF 20% 50V
C219	1-123-356-00	ELECT 10MF 20% 50V
C220	1-123-356-00	ELECT 10MF 20% 50V
C221	1-123-356-00	ELECT 10MF 20% 50V
C222	1-162-306-31	CERAMIC 0.01MF 30% 16V
C223	1-102-526-00	CERAMIC 75PF 5% 50V
C224	1-102-852-00	CERAMIC 47PF 5% 50V
C225	1-162-306-31	CERAMIC 0.01MF 30% 16V
C226	1-161-494-00	CERAMIC 0.022MF 30% 25V
C227	1-162-306-31	CERAMIC 0.01MF 30% 16V
C228	1-123-356-00	ELECT 10MF 20% 50V
C229	1-123-318-00	ELECT 33MF 20% 16V
C230	1-124-184-00	ELECT 3.3MF 20% 50V
C231	1-161-494-00	CERAMIC 0.022MF 30% 25V
C232	1-161-494-00	CERAMIC 0.022MF 30% 25V
C233	1-123-379-00	ELECT 0.47MF 20% 50V
C234	1-124-182-00	ELECT 1MF 20% 50V
C235	1-162-305-31	CERAMIC 0.0068MF 30% 16V
C236	1-162-286-31	CERAMIC 220PF 10% 50V
C237	1-101-005-00	CERAMIC 0.022MF 50V
C301	1-162-282-31	CERAMIC 100PF 10% 50V
C302	1-162-282-31	CERAMIC 100PF 10% 50V
C304	1-161-494-00	CERAMIC 0.022MF 30% 25V
C305	1-123-821-00	ELECT 47MF 20% 16V
C306	1-123-611-00	ELECT 1MF 20% 50V
C307	1-162-306-31	CERAMIC 0.01MF 30% 16V
C308	1-161-494-00	CERAMIC 0.022MF 30% 25V
C401	1-161-494-00	CERAMIC 0.022MF 30% 25V
C402	1-161-261-00	CERAMIC 15PF 5% 50V